

## Fiberight

Boilers #1 & #2 are each 48.1 MMBtu/hr gasifier/boilers which fire PHS and wood which has been culled from the waste stream and chipped.

CISWI – Commercial and Industrial Solid Waste Incineration

MSW – Municipal Solid Waste

NHSM – Non-Hazardous Secondary Material

PHS – Post Hydrolysis Solids

RDF – Refuse-Derived Fuel

### Scenario #1

- Assume PHS meets the legitimacy criteria and is not a solid waste
- Assume the wood is a Refuse-Derived Fuel (RFD) which by definition is MSW

Question: What rule(s) would be applicable regarding firing of the wood?

### Subpart 4E

This rule applies to new Other Solid Waste Incineration (OSWI) units.

An OSWI unit is defined as either a very small municipal waste combustion unit or an institutional waste incinerator unit unless they are specifically exempted by the rule.

The boilers are not institutional waste incinerator units.

A very small municipal waste combustion unit is defined as *“any municipal waste combustion unit that has the capacity to combust less than 35 tons per day of municipal solid waste or refuse-derived fuel, as determined by the calculations in §60.2975.”*

Refuse-Derived Fuel is defined as *“a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:*

- (1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.*
- (2) Pelletized refuse-derived fuel.”*

Municipal Solid Waste (MSW) is defined as *“refuse (and refuse-derived fuel) collected from the public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (1) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (2) an incineration unit shall not be considered to be combusting municipal solid waste for purposes of this subpart if it combusts a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste, as determined by §60.2887(b).”*

Therefore, wood which has been separated from MSW and processed through shredding (chipping) is RFD and is, by definition, MSW.

Per the referenced calculation in §60.2975, each boiler can combust up to 104.9 ton/day of refuse derived fuel. Since the boilers have the capacity to combust more than 35 ton/day of wood (RFD), they are therefore, NOT OSWI units and are NOT subject to Subpart 4E.

#### Subpart 4A

This rule applies to new Small MSW Combustion units.

*A MSW Combustion unit is defined as “any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units.”*

*Municipal Solid Waste is defined as “household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).”*

*Refuse-Derived Fuel is defined “as a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:*

- (1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.*
- (2) Pelletized refuse-derived fuel.”*

Therefore, wood which has been separated from MSW and processed through shredding (chipping) is RFD and is, by definition, MSW.

The boilers are MSW Combustion units.

Subpart 4A applies to new MSW Combustion units that have the capacity to combust at least 35 ton/day but less than 250 ton/day of MSW or RFD. Since each boiler has the capacity to combust up to 104.9 ton/day, Subpart 4A does apply to these boilers.

However, the boilers can be exempted from Subpart 4A by either:

1. Taking a permit limit of 11 ton/day of MSW. [§60.1020(a)]  
or
2. Taking a permit limit to combust no more than 30% MSW. [§60.1020(g)]

#### Subpart 4C

This rule applies to CISWI units.

*A CISWI unit is defined as “any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241. If the operating unit burns materials other than traditional fuels as defined in §241.2 that have been discarded, and you do not keep and produce records as required by §60.2175(v), the operating unit is a CISWI unit.”*

It is unlikely the wood would be classified as a Hazardous Waste.

*Traditional Fuels are defined as “materials that are produced as fuels and are unused products that have not been discarded and therefore, are not solid wastes, including: (1) Fuels that have been historically managed as valuable fuel products rather than being managed as waste materials, including fossil fuels (e.g., coal, oil and natural gas), their derivatives (e.g., petroleum coke, bituminous coke, coal tar oil, refinery gas, synthetic fuel, heavy recycle, asphalts, blast furnace gas, recovered gaseous butane, and coke oven gas) and cellulosic biomass (virgin wood); and (2) alternative fuels developed from virgin materials that can now be used as fuel products, including used oil which meets the specifications outlined in 40 CFR 279.11, currently mined coal refuse that previously had not been usable as coal, and clean cellulosic biomass. These fuels are not secondary materials or solid wastes unless discarded.”*

Beyond the fact that the wood proposed to be fired in the boilers has been discarded, it also does not meet the definition of clean cellulosic biomass which means “those residuals that are akin to traditional cellulosic biomass, including, but not limited to: Agricultural and forest-derived biomass (e.g., green wood, forest thinnings, clean and unadulterated bark, sawdust, trim, tree harvesting residuals from logging and sawmill materials, hogged fuel, wood pellets, untreated wood pallets); urban wood (e.g., tree trimmings, stumps, and related forest-derived biomass from urban settings); corn stover and other biomass crops used specifically for the production of cellulosic biofuels (e.g., energy cane, other fast growing grasses, byproducts of ethanol natural fermentation processes); bagasse and other crop residues (e.g., peanut shells, vines, orchard trees, hulls, seeds, spent grains, cotton byproducts, corn and peanut production residues, rice milling and grain elevator operation residues); wood collected from forest fire clearance activities, trees and clean wood found in disaster debris, clean biomass from land clearing operations, and clean construction and demolition wood. These fuels are not secondary materials or solid wastes unless discarded. Clean biomass is biomass that does not contain contaminants at concentrations not normally associated with virgin biomass materials.”

Fiberight has no control over the type of wood discarded in the waste stream and it is likely to include painted, treated, and engineered woods. These wood materials contain contaminants at concentrations well above what is normally associated with virgin biomass materials.

The wood processed at the facility is therefore not considered clean cellulosic biomass which means it is also not a traditional fuel. It would be classified as a secondary material and therefore would be a Non-Hazardous Secondary Material (NHSM).

From §40 CFR 241.3(a), NHSMs *“that are combusted are solid wastes, unless a petition is submitted to, and a determination granted by, the EPA...”*

However, the following NHSM are NOT solid wastes when combusted: [§241.3(b)]

1. NHSM used as a fuel in a combustion unit that remain within the control of the generator and that meet the legitimacy criteria. (Not applicable, the wood does not remain in the control of the generator.)
2. NHSM that is specifically exempted by the rule. (Not applicable)
3. NHSM used as an ingredient in a combustion unit that meet the legitimacy criteria. (Not applicable, the wood is not an “ingredient”.)
4. Fuel used in a combustion unit, produced from the processing of discarded NHSM and that meet the legitimacy criteria. The legitimacy criteria apply after the NHSM is processed to produce a fuel. Until the discarded NHSM is processed to produce a non-waste fuel, the discarded NHSM is considered a solid waste.

From §241.2, the definition of Processing means *“any operations that transform discarded non-hazardous secondary material into a non-waste fuel or non-waste ingredient product. Processing includes, but is not limited to, operations necessary to: Remove or destroy contaminants; significantly improve the fuel characteristics of the material, e.g., sizing or drying the material in combination with other operations; chemically improve the as-fired energy content; or improve the ingredient characteristics. Minimal operations that result only in modifying the size of the material by shredding do not constitute processing for purposes of this definition.”*

Since the wood is only being processed by chipping, it does not meet the definition of “processing”. Therefore, it is not fuel produced from the processing of discarded NHSM and would require a petition to, and determination by, EPA to not be considered a solid waste.

Questions:

1. If Subpart 4A is applicable, but the unit falls under one of the exemptions listed in §60.1020, is the unit still exempted from Subpart 4C under §60.2020(c)?